

Typification of *Corylopsis coreana* (Hamamelidaceae) and *Carpinus laxiflora* var. *longispica* (Betulaceae)

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For two Korean woody taxa described by H. Uyeki (1924) lectotype of *Corylopsis coreana* Uyeki (Hamamelidaceae) and neotype of *Carpinus laxiflora* (Siebold & Zucc.) Blume var. *longispica* Uyeki (Betulaceae) are designated here.

Key words: *Carpinus laxiflora* var. *longispica*, *Corylopsis coreana*, Korea, lectotype, neotype.

During an investigation of woody flora in Korea we found type problems in H. Uyeki's collection. Typification of two well recognized taxa, *Carpinus laxiflora* (Siebold & Zucc.) Blume var. *longispica* Uyeki (Betulaceae) and *Corylopsis coreana* Uyeki (Hamamelidaceae) is necessary because Uyeki's original collections were destroyed during the Korean War (1950–1953). First a brief summary of his personal history is necessary in order to understand the circumstances.

The names *Corylopsis coreana* and *Carpinus laxiflora* var. *longispica* were based on Uyeki's specimens collected in southern Korea (Uyeki and Lee 1924). During the annexation of Korea by Japan from 1910 to 1945, Homiki Uyeki (1888–1976) had been a professor who taught dendrology and silviculture courses at Suwon Agricultural College (currently College of Agriculture and Life Sciences of Seoul National University). It has been known that his collections amounted to 30,000 including type specimens. Unfortunately his original collections were completely lost during the Korean War

and his collections are not left now at T. B. Lee Herbarium, The Arboretum of Seoul National University (SNUA).

The original descriptions of both *Corylopsis coreana* and *Carpinus laxiflora* var. *longispica* were published by H. Uyeki in a local campus journal, *Suigen Gakuho*, in 1924. Uyeki's descriptions were poorly known because this journal was not broadly distributed and most copies seemed to be lost except for a single original copy of the journal at the Library of the College of Agriculture and Life Sciences of Seoul National University. Because his original specimens do not exist at SNUA, the identities of the taxa that he described can be determined only from his descriptions, which led us to designate types. In the absence of materials demonstrably used by Uyeki to validate these names, the names *Corylopsis coreana* and *Carpinus laxiflora* var. *longispica* must be typified using the original materials or collections from the type locality.

Regarding conifer flora in Korea, Uyeki occasionally worked together with Professor

Takenoshin Nakai (1882–1952) at the University of Tokyo, who was the government botanist of colonial Korea, Chosen (Uyeki 1926). Nakai often visited Suwon Agricultural College and collected plants and had communication with Uyeki (Kim et al. 2006). Uyeki gave his specimens to Nakai because he was the authority on Korean Flora at that time. Nakai not only reevaluated many species of Korean plants but also described many taxa based on Uyeki's collections such as *Diervilla subsessilis* Nakai and *Barbarea sibirica* (Regel) Nakai (Nakai 1918, 1919).

1) *Corylopsis coreana* (Hamamelidaceae)

Nakai (1939) cited a specimen from Uyeki's 1909 collection as a merotype of *Corylopsis coreana* (Fig. 1). According to Fuchs (1958), a merotype is a fragment of the original holotype, which has been divided into two or more pieces after having been used as a basis for the description. We confirmed a duplicate specimen that had been obtained by Nakai from Uyeki to be an isotype without fruits, rather than a merotype. The holotype of *Corylopsis coreana* no longer exists, but the isotype is still available at TI. We designate this isotype as a lectotype of *Corylopsis coreana*, according to ICBN Article 9.9 (McNeill et al. 2006). The collection number for this specimen was obtained from the original specimen sheet (Fig. 1), while the collection date was identified based on Nakai (1939).

Hatusima (1990) gave brief details of Uyeki's work and stated that *Corylopsis coreana* was not an effectively published name because *Suigen Gakuho* was an ephemeral printed matter, although he was not able to examine this journal. *Suigen Gakuho* was a periodical publication and some volumes between 14 and 82 (from 1921 to 1930) remain at the Library of the College of Agriculture and Life Sciences of Seoul National University. Obviously Hatusima did not consult some other regular issues of this journal and jumped to his conclusion. Subsequent to this comment, his new Latin description with the

holotype was presented. This type specimen was clearly referable to Uyeki's type, because Hatusima cited SUN (probably misspelled SNUA) as the designated type herbarium. In addition, Hatusima designated a topotype collected from Mt. Jiri-san, not Mt. Jogye-san. Despite Hatusima's attempt to disentangle the nomenclatural problem of *C. coreana*, it is clear that Hatusima apparently examined neither the reference nor the type specimen. The description that Hatusima gave and the specimens cited should be disregarded in our point of view.

Corylopsis coreana was first reported by Uyeki to be morphologically distinct from *C. spicata* Siebold & Zucc. due to the former's glabrous leaves (Uyeki and Lee 1924). Later, Uyeki compared *C. coreana* to *C. gotoana* Makino (Uyeki 1935), and determined that the leaves of *C. coreana* were broader, and were glabrous beneath and that *C. coreana* had fewer leaf veins, more flowers, relatively longer petals and stamens, and styles almost equal in length. He also contrasted *C. coreana* with *C. glabrescens* Franch. & Sav. in terms of the number of leaf veins.

Recently *Corylus coreana* has been treated as a variety of *C. glabrescens*, i.e., *C. glabrescens* var. *gotoana* (Makino) T. Yaman. (1986) or *C. gotoana* Makino var. *coreana* (Uyeki) T. Yamaz. (1988) or even a synonym of *C. gotoana* by Yamazaki (2001). *Corylus glabrescens* var. *glabrescens* is characterized by the stamens red and distinctly shorter than the petals (4–5 mm) while *C. glabrescens* var. *gotoana* has the stamens yellow and nearly as long as the petals (8–10 mm) (Yamanaka 1986). Uyeki (1935) later described *C. coreana* with filaments 4 mm with pale green stamens and petals were 5 mm. Since the variation in stamen length and color (red/yellow) is rather great, it has not always been possible to exclude *C. coreana* from var. *gotoana* and var. *glabrescens*. According to the analysis of morphological characters, however, *Corylopsis coreana* can be distinguished from these two Japanese taxa by quantitative



Fig. 1. A. Lectotype of *Corylopsis coreana* Uyeki without flowers (TI). B. Handwriting with collection site information on the sheet.

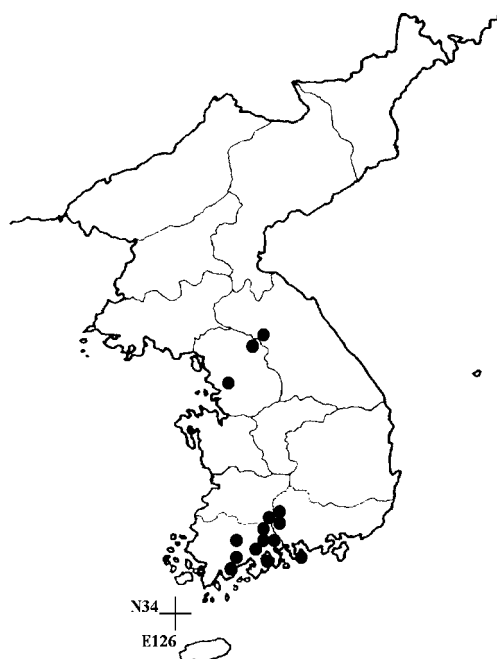


Fig. 2. Distribution of *Corylopsis coreana* Uyeki in Korea.

characters, such as large leaf size (6.5–15 cm × 5–14 cm vs 4–10 cm × 3–8 cm leaf length width; *C. coreana* vs. *C. glabrescens*), more number of flowers per inflorescence (5–13 vs 6–10), and no hair on the lower surface of leaves, as Uyeki (1935) indicated. Also, cpDNA analyses indicated that the haplotypes of *C. coreana* were very distinctive, compared to those of Japanese *Corylopsis* species (unpublished data).

***Corylopsis coreana* Uyeki** in Uyeki & Lee, Suigen Gakuho **41**: 8 (1924) – *Corylopsis gotoana* var. *coreana* (Uyeki) T. Yamaz. in J. Jpn. Bot. **63**: 29 (1988).

Lectotype (designated here): Korea. Chyolla australis, mont Chokē [Korea. Jeollanam-do, Suncheon-si, Songkwang-myeon, Seungju-eup, Jukhak-ri, Mt. Jogyesan], Aug. 1909, H. Uyeki 4493 (TI; Fig. 1).

Protologue. *Corylopsis coreana* [coreana], Ueki [Uyeki] (Sp. nov.) Frutex. Ramus hornotinus glaberrimus, caerules-fuscus, lenticellis flavis punctatis. Folia, orbiculats-

ovata, basi distincte cordata, apice breviter acuta, crasse aristato-serrata, 6–7.5 c.m [cm] longa, 6–8.2 C. m. [cm] lata. (6 × 8, 7.5 × 7.5, 6.3 × .60, 7.0 × 8.2) Supra viridia infra albo-glaucescencia, utrinque glabra. Costis 5–8. [,] plerumque 7–8 petiolata petiolis 1.5–2.8 C.m [cm] longis glabris. Gemmae ovato-ellipticae, apice acutae, glabrae, 5–8m. m. [mm] longae. Fl. et Fructus nobis non suppetunt.

Hab. Corea, Chyolla australis, mont Chokē.

This differs from *C. spicata* by the glabrous [glabrous] character and the form of leaves, and from *C. glabrescens* by number and quite glabrous character of lateral veins and not distinguished [indistinct] serration of the before.

Korean name: Suiyor namu.

Distribution. Jellanam-do, Gyeonggi-do (Mt. Gwanggyo-san, Mt. Gwandeok-san and Mt. Baekun-san), Gyeongsangnam-do and Jeollabuk-to (Mt. Jiri-san and Namhae-gun) (Fig. 2).

Additional specimen examined. **Korea. Gyeonggi-do:** Pocheon-gun, Mt. Baekun-san, 17 Apr. 1983, T. B. Lee s.n. (SNUA); Mt. Baekun-san, in the valley between Mt. Baekun-san and Mt. Kwangdeok, 3 June 1993, J. I. Jeon & C.-S. Chang, Jeon10135 (SNUA); Mt. Baekun-san, 12 June 1995, J. I. Jeon & C.-S. Chang, Chang1737 (SNUA); Mt. Baekun-san, 12 June 1995, J. I. Jeon & C.-S. Chang, Chang1738 (SNUA); Yongin-si, Suji-eup, Gogi-ri, Mt. Gwanggyo-san, 27 Apr. 1963, T. B. Lee et al., s.n. (SNUA). **Gyeongsangnam-do:** Hadong-gun, Akyang-myeon, Sinheung-ri, Mt. Chiri-san (= Mt. Jiri-san), Chilseongbong ca. 0.5–1.5 km from the 'Sinheung' village, 23 June 2004, S. Park & H.S. Lee, SKY0367 (SNUA); Hadong-gun, Hadong-eup, Heungryong-ri, Mt. Chiri-san (= Mt. Jiri-san), Gujaebong ca. 1–3 km from the 'Meokjeomgol' village, 30 July 2004, S. Park, H. Kim & H. I. Lim SKY0436 (SNUA); Hadong-gun, Mt. Geumo-san, 12 June 2002, J.-O. Huyn & H.-K. An 2002116 (KH); Namhae-gun, Sangju-myeon, Sincheon-ri, Geumsan, 29 Sept. 2003, G. Y. Chung & al., ANH-0003473 (ANH); Sancheong-gun, Sancheong-eup, Nae-ri, Mt. Chiri-san (= Mt. Jiri-san), Woongseokbong, ca. 3.0–4.0 km from the Jigoksah, 16 Apr. 2004, S. Park, C.-S. Chang & S.A. Ryu, Ryu0003 (SNUA). **Jeollabuk-do:** Namwon-si, Jucheon-myeon, along the street of Baemsagol, N35 27 26.7 E127 26 05.5, 4 Apr. 2008, H. Kim & R. E. Kim, WKB1463 (SNUA); Namwon-si, Baemsagol, an area of Jiri National Park office, 35°22'11.6"N 127°34'45.7"E, 4 Apr. 2008, H. Kim & R. E. Kim, WKB1482 (SNUA); Namwon-si, Sandong-myeon,



Fig. 3. Neotype of *Carpinus laxiflora* (Siebold & Zucc.) Blume var. *longispica* Uyeke (SNUA).



Fig. 4. Distribution of *Carpinus laxiflora* (Siebold & Zucc.) Blume var. *longispica* Uyeki in Korea.

Taepyung-ri, North of the Mt. Yeonhwa-san, 35°30'46.8"N 127°27'53.1"E, 4 Apr. 2008, K. B. Woo & al., WKB1452 (SNUA). **Jeollanam-do:** Boseong-gun, Boknae-myeon, Boknae-ri, Ibseok, alt. 150 m, 3 Sep. 1995, H. T. Im 959006 (CNU); Goheung-gun, Jukgok-myeon, around a hill near Bongjeong, alt. 100–160 m, 2 June 1995, H. T. Im & S. Y. Park, Im 010979; Goheung-gun, Mt. Palyeong-san, 19 Aug. 1976, W. C. Lee s.n. (KWNU); Goheung-gun, Mt. Unnam-san, 24 Sept. 2004, C. H. Kim & J. G. An 13968 (CNU); Gokseong-gun, Tongchun-Saebong, alt. 250–350 m, 2 June 1995, H. T. Im & H. H. Hong, Im34334-2 (CNU); Gokseong-gun, Mt. Yubong, 6 Sept. 1997, J. H. Park s.n. (KNU); Gurye-gun, Bonggang-myeon, Joryeong-ri, Mt. Dosolbong, 27 Mar. 2004, B. U. Oh & al., Gurye-gun(Dosolbong)-040327-018 (CNU); Gwangyang-si, Okryong-myeon, Mt. Baekun-san, 13–19 Sep. 1957, T. B. Lee s.n. (SNUA); Gwangyang-si, Mt. Baekun-san, facing the northwest, 1125 m, 13 June 1963, T. B. Lee, J. D. Park & T.W. Cho s.n. (SNUA); Hwasun-gun, Hwasun-eup, Mt. Dubong-san, 19 May 2003, S. O. Kim & J. G. Gwon s.n. (HNHM); Hwasun-gun, Nam-myeon, Mt. Mohu-san, alt. 550m, 13 Aug. 1994, H. T. Im, Im 904017 (CNU); Hwawun-gun, Nam-myeon, Yuma-ri, Yuma, 23 Mar. 1995, H. T. Im 34290 (CNU); Jangheung-gun, Mt. Cheongwan-san, 18 May 2003, B. Y. Sun & al., Jangheung 3-0300518-001 (CNU); Jangheung-gun, Gwansan-eup, Pyungcho-ri, Mt. Yeontaebong (alt. 723 m) – Jangchunje (alt. 100 m), 19 May, 2000, H. T. Im 05276 (CNU); Suncheon-si, Juamdang

(dam), 11 May 1991, H. T. Im 1694 (CNU); Suncheon-si, Seo-myeon, Hongdae-ri, Mt. Heuia-san, 7 Apr. 1995, B. Y. Sun & C. H. Kim 7010 (CNU); Suncheon-si, Songkwang-myeon, Seungju-eup, Jukhak-ri, Mt. Chokye-san (= Mt. Jogye-san), near the stream in front of Songkwang Temple, 35°19.0'N 127°15'49.81"E, 4 Apr. 2008, K. B. Woo, H. N. Oh & C.-S. Chang, WKB1442 (SNUA).

2) *Carpinus laxiflora* var. *longispica* (Betulaceae)

Uyeki and Lee (1924) described *Carpinus laxiflora* var. *longispica* based on the presence of long infructescences (13–15 cm long) and long peduncles (4–4.5 cm long). Measurements of many individuals (Jeon and Chang 1997) suggested that a morphological discontinuity between *C. laxiflora* (Siebold & Zucc.) Blume var. *laxiflora* and var. *longispica* exists in terms of infructescence length (5.2–9.6 cm vs. 10.4–16.0 cm) and the number of bracts per catkin (14–50 vs. 48–72). In addition, Uyeki described var. *longispica* as possessing bracts, 2.2–2.5 cm long and 1.2–1.5 cm wide, which are larger than those of var. *laxiflora* (1.8 × 1.1 cm). However, we did not observe any differences between the two taxa in bract size. *Carpinus laxiflora* var. *longispica* is restricted to several small geographic areas of southwestern Korea, while var. *laxiflora* is widely distributed in both Korea and Japan.

***Carpinus laxiflora* (Siebold & Zucc.) Blume var. *longispica* Uyeki in Uyeki & Lee, Suigen Gakuho 41: 9 (1924).**

Neotype (designated here): Korea. Jeollanam-do, Suncheon City, Songkwang-myeon, Seungju-eup, Jukhak-ri, Mt. Jogye-san, near the stream in front of Songkwang Temple, 30 June 1993, J. I. Jeon & D. J. Ha, Jeon10005 (SNUA; isoneotype-KH; Fig. 3).

Protologue. *Carpinus, laxiflora* var *longispica*, Ueki [Uyeki] Arbor. Spica fructifera longissima, 13–15 c. m [cm] longae, longe-pedunculata, 4–4.5 c. m. [cm] longa. Bracteae, 2.2–2.5 c. m. [cm] longae, 1.2–1.5 c. m. [cm] latae cum basi lobulis accessoribus. Folia, elliptica, 7.8 c. m.

[cm] longa \times 3.5 c. m. [cm] lata, \times 1.6 c. m. [cm] petiolis. $7.3 \times 3.5 \times 1.4$, $7.0 \times 3.7 \times 1.3$ [,] $7.3 \times 4.0 \times 1.5$, $5.3 \times 3.0 \times 5.0$. Apice acuminata, basi rotundata, secus venas breviter puberula.

Hab. Corea, chyalla [Chyolla] australis, mont Chokē.

Korean Name: Soo Namu.

Carpinus laxiflora var. *macrothyrsa* Koidz. in Acta Phytotax. Geobot. **9**: 73 (1940). Lectotype (designated here): Korea. Mt. Chiisan, Hannyaho, Gwaun [Korea, Jeollanam-do, Gurae-gun, Mt. Jiri-san, Peak Banya-bong], 2 June 1935, S. Okamoto s.n. (KYO, seen as a photo).

Distribution. Jeollanam-do, Jeollabuk-do (Mt. Naejang-san), Gyeongsangnam-do (Mt. Jiri-san) (Fig. 4).

Additional specimens examined. **Korea.** **Gyeongsangnam-do**: Mt. Chiisan [Mt. Jiri-san], ?June 1935, J. Ohwi s.n. (KYO, seen as a photo); Mt. Tii [Mt. Jiri-san], 11 June 1935, S. Okamoto s.n. (KYO, seen as a photo). **Jeollabuk-do**: Jeongeup-si, Naejang-dong, Mt. Naejang-san, 16 Aug. 1965, T. B. Lee & al., s.n. (SNUA); Mt. Naejang-san, near 'Naejang' Temple, 27 July 1993, J. I. Jeon & D. J. Ha, Jeon10002 (SNUA). **Jeollanam-do**: Suncheon-si, Songgwang-myeon, Seungju-eup, Jukhak-ri, Mt. Chokye-san (= Mt. Jogye-san), near the stream in front of 'Songkwang' Temple, 5 May 1993, J. I. Jeon & D. J. Ha, Jeon10068 (SNUA); Suncheon-si, Songgwang-myeon, Seungju-eup, Jukhak-ri, Mt. Chokye-san (= Mt. Jogye-san), near the stream in front of 'Songgwang' Temple, 30 June 1993, J. I. Jeon & D. J. Ha, Jeon10003 (SNUA).

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張 珍成, 張 桂義*: *Corylopsis coreana* (マンサク科) と *Carpinus laxiflora* var. *longispica* (カバノキ科) のタイプ選定

植木秀幹 (1924) によって記載された韓国産の樹木 2 種に対して, *Corylopsis coreana* Uyeki (マンサク科)

のレクトタイプ選定と *Carpinus laxiflora* (Siebold & Zucc.) Blume var. *longispica* Uyeki (カバノキ科) のネオタイプ選定を行った。

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